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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/757,504	01/15/2004	Jun-Hee Choi	030681-620	6308

21839 7590 01/04/2005

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EXAMINER	
WILSON, SCOTT R	

ART UNIT	PAPER NUMBER
2826	

DATE MAILED: 01/04/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/757,504	CHOI, JUN-HEE	
	Examiner	Art Unit	
	Scott R. Wilson	2826	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *12 October 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-23* is/are pending in the application.

4a) Of the above claim(s) *1-12* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *13,14,16,18,19,21 and 23* is/are rejected.

7)☒ Claim(s) *15,17,20 and 22* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *15 January 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *5/6/04*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

Applicant's election without traverse of claims 13-23 in the response filed 12 October 2004 is acknowledged.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in-
> (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effect under this subsection of a national application published under section 122(b) only if the international application designating the United States was published under Article 21(2)(a) of such treaty in the English language; or
> (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that a patent shall not be deemed filed in the United States for the purposes of this subsection based on the filing of an international application filed under the treaty defined in section 351(a).

Claims 13, 14 and 16 are rejected under 35 U.S.C. 102(e) as being anticipated by Seon et al.. As to claim 13, Seon et al., Figure 1 and paragraph [0036], discloses a method of manufacturing a field emission device, the method comprising forming a field emission array including an electron emission source (2) for emitting electrons and a gate electrode (4) having a gate hole through which the electrons pass, on a substrate (1). Seon et al., Figure 4 and paragraph [0052], further discloses manufacturing an additional mesh grid (50) in which an electron-controlling hole corresponding to the gate hole is formed, thermally expanding the substrate on which the field emission array is formed and the mesh grid to be fixed onto the substrate, fixing the thermally-expanded mesh grid onto the substrate, paragraph [0067] and [0069], embodied as forming the mesh grid on the gate (47) which is on the substrate (42), using a tension member, Figure 6, element (43a), paragraph [0061], and cooling the substrate and the mesh grid at room temperature.

As to claim 14, Seon et al. discloses that the rear plate and the field emission array are heated to about 400 °C in paragraph [0069], which is higher than an operating temperature of the field emission array, which is about room temperature.

As to claim 16, Seon et al., paragraphs [0052] and [0058], discloses that insulating layers (49) and (51) are formed above and below the mesh grid (50).

Claims 18,19 and 21 are rejected under 35 U.S.C. 102(e) as being anticipated by Seon et al.. As to claim 18, Seon et al., Figure 4 and paragraphs [0048] and [0051], discloses a method of manufacturing a field emission display, the method comprising preparing an anode plate on which an anode electrode (53) and a phosphor layer (54) are formed inside of a front plate (41), preparing a cathode plate (42) on which a field emission array including an electron emission source (46) for emitting electrons corresponding to the phosphor layer and a gate electrode (47) having a gate hole through which the electrodes pass inside of a rear plate, manufacturing an additional mesh grid (50) in which an electron-controlling hole corresponding to the gate hole is formed, thermally expanding the rear plate on which the field emission array is formed and the mesh grid to be fixed onto the rear plate, paragraph [0069], fixing the thermally-expanded mesh grid onto the substrate using a tension member (43), and vacuumizing and sealing the anode plate and the cathode plate in the state that a spacer (43) having a predetermined depth is interposed between the cathode plate and the anode plate. Tension member (43) also serves as the spacer.

As to claim 19, Seon et al. discloses that the rear plate and the field emission array are heated to about 400 °C in paragraph [0069], which is higher than an operating temperature of the field emission array, which is about room temperature.

As to claim 21, Seon et al., paragraphs [0052] and [0058], discloses that insulating layers (49) and (51) are formed above and below the mesh grid (50).

As to claim 23, Seon et al., paragraph [0059] discloses that the spacer (43) is fixed by through-holes (59), which is within the scope of binding the spacer.

Allowable Subject Matter

Claim 15 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. No prior art discloses the claimed invention with a fixing pad for fixing the tension member to the substrate.

Claim 17 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. No prior art discloses the claimed invention with the grid insulating layer formed from amorphous silicon or silicon oxide.

Claim 20 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. No prior art discloses the claimed invention with a fixing pad for fixing the tension member to the substrate.

Claim 22 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. No prior art discloses the claimed invention with the grid insulating layer formed from amorphous silicon or silicon oxide.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Scott R. Wilson whose telephone number is 571-272-1925. The examiner can normally be reached on M-F 8:30 - 4:30 Eastern.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nathan Flynn can be reached on 571-272-1915. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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NATHAN J. FLYNN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800

srw
December 23, 2004